Curriculum Vitae

Personal information

First name / Surname	Manuele Tamburrano
Nationality	Italian
Gender	Male

Work experience

Dates	October 2016 - Present
Name and address of employer	Sapienza, University of Rome
Occupation or position held	Researcher/Developer
Main activities and responsibilities	Design and development of applications for Avionic systems
Type of business or sector	University Research Lab
Dates	May 2015 – August 2015
Name and address of employer	Google Summer of Code 2015
Occupation or position held	Mentor
Project	Deep Learning for object recognition – Yida Wang
Organisation	OpenCV
Dates	May 2014 – August 2014
Name and address of employer	Google Summer of Code 2014
Occupation or position held	Mentor
Project	Geometrical-primitives based localization system – Biagio Montesano
Organisation	OpenCV
Dates	July 2013 – July 2016
Name and address of employer	C.R.R., Rome, Italy
Occupation or position held	Researcher/Developer
Main activities and responsibilities	Research, design and development of applications in computer vision, data mining, big data, machine learning and deep learning
Type of business or sector	Research Establishment
Main projects	Design and development of a tool to automatically extract geometric and semantic data from a file CAD through image analysis. The tool also allows to export data to OpenStreetMap, georeferencing, route calculation and data editing. Design and development of an indoor localization system, running on an Android device in native code (JNI). The localization is done without the aid of GPS, Wi-Fi or Mobile network, but it uses a place recognition algorithm with a custom line descriptor developed specifically for that task. Design and development of a real-time system to automatically read the number of the bibs of the participants in a marathon. The custom OCR has been developed using neural networks, trained on synthetic data. Design and development of a real-time object recognizer running on an Android device in native code (JNI). The recognition is done using neural networks trained with synthetic data, after an initial 3D scansion of the target objects and then artificially augmented..
Dates	October 2010 – June 2013

Name and address of employer	C.A.T.T.I.D., Rome, Italy
Occupation or position held	Researcher/Developer
Main activities and responsibilities	Research, design and development of NFC, computer vision, web and Android applications.
Type of business or sector	Research Establishment
Main projects	Design and development of LINE-RGB, a real-time texture-less or low-textured object detection algorithm. LINE-RGB is an evolution of LINE-MOD, with the addition of colour discrimination and several improvements. Integration of an object detection algorithm (LINE-2D) in a package tracking system. Design and development of Shoplovers, a social network to share shopping experience through the use of NFC tags. Design and development of a system to allow reservation and payment of parking through the use of Android devices and NFC tags. Design and development of a system to allow payment and validation of tickets for public transports through the use of NFC Android devices. Development of a tracking system of items through the use of the EPC standard and RFID tags, to aid to detect issues during the logistic process.

Education and training

Dates	2010 – 2012
Name and type of organisation providing education and training	Sapienza, University of Rome – Second level degree Computer Science
Principal subjects / occupational skills covered	Computer vision, distributed systems, algorithm engineering, Computability and Complexity, Geographic Information Systems, Languages and compilers, Game design, Web interaction.
Level in national or international classification	Master level degree in Computer Science (110/110, with honors)
Dates	2003 – 2010
Name and type of organisation providing education and training	Sapienza, University of Rome – First level degree Computer Science
Principal subjects / occupational skills covered	Image processing, Computer graphic, Visualization algorithms, Mobile development, Human-machine interaction, Operating systems, Databases, Network programming, Physic, English
Level in national or international classification	First level degree in Computer Science (103/110)
Dates	1998 - 2003
Name and type of organisation providing education and training	Liceo Scientifico Vito Volterra – Scientific Lyceum
Principal subjects / occupational skills covered	Math, Italian, Physic, Computer Science, Biology, English
Dates	Since 2014
Name and type of organisation providing education and training	Kaggle competitions

Principal subjects / occupational skills covered	Partecipation in competition: • Allstate Purchase Prediction Challenge • Right Whale Recognition • Second Annual DataScience Bowl • State Farm Distracted Driver Detection
Dates	February 2016
Name and type of organisation providing education and training	Udacity – “Deep Learning” – Vincent Vanhoucke
Principal subjects / occupational skills covered	Overview on Deep learning and methodologies design intelligent systems that learn from complex and/or large-scale datasets. The main contents are neural network, convolutional neural network e long short term memory network. Application of the theory and assignments on TensorFlow library (Google).
Dates	December 2015
Name and type of organisation providing education and training	Edx – “Scalable Machine Learning”
Principal subjects / occupational skills covered	The course presents the underlying statistical and algorithmic principles required to develop scalable machine learning pipelines. It presents an integrated view of data processing by highlighting the various components of these pipelines, including feature extraction, supervised learning, model evaluation, and exploratory data analysis.
Dates	December 2015
Name and type of organisation providing education and training	Coursera – “Machine Learning” – Andrew Ng
Principal subjects / occupational skills covered	Supervised learning (ie. support vector machines - SVM, kernels, neural networks). Unsupervised learning (clustering, dimensionality reduction, recommender systems, deep learning). Best practices in machine learning.
Dates	6/7 September 2014
Name and type of organisation providing education and training	ECCV European Conference on Computer Vision
Principal subjects / occupational skills covered	Participation in workshops and tutorials

Open Source Contributions

Project	Caffe – Deep Learning Framework
Descritpion	Design and implementation of an additional layer type for the Deep Learning library “Caffe”. The layer filters, using a customizable cost function, the outputs of the previous hidden layers to allow selective propagation of weights to successive layers.
Reference	https://github.com/BVLC/caffe/pull/2054
Project	LBD and EDLines – Line Descriptor, Line Detector and Matcher
Descritpion	Bug fixing, dependencies simplification and improvements on the implementation of the Line Descriptor, Line Detector and Matcher originally developed by Lilian Zhang, C. Topal and C. Akinlar. This re-implementation has been chosen as baseline for the Line Detection Challenge 2017.

Reference	https://github.com/mtamburrano/LBD_Descriptor
Project	OpenCV – Open Source Computer Vision Library
Descritpion	Applied a patch to enable NEON optimization on the cvRound method
Reference	https://github.com/opencv/opencv/pull/4103#issuecomment-110108707

Personal projects and interests

- Knowledge of the cryptocurrency ecosystem, in particular of the Bitcoin protocol.
- Developed custom clients and tools for alternative cryptocurrencies, such HunterCoin
- Designed and developed Android applications, published on the Amazon Appstore

Personal skills and competences

MOTHER TONGUE	Italian
OTHER LANGUAGES	
	English
• Understanding	Independent user
• Writing	Independent user
• Speaking	Independent user
TECHINAL SKILLS AND COMPETENCES	Knowledge of C++, C, Python, Java, PHP, HTML, CSS,, Javascript, C#, Objective-c, Octave.
	Knowledge of Android system and related framework/libraries, such as JNI, Firebase, PhoneGap, AdMob, Proguard.
	Knowledge of compilers and debuggers, such as gcc, gdb.
	Knowledge of build tools such as Gradle, Maven.
	Knowledge of SQL databases, such as Mysql and PostgresSQL.
	Knowledge of NoSQL databases, such as CouchDB.
	Knowledge of IDEs such as Eclipse, NetBeans, Android Studio, PyCharm, Visual Studio.
	Knowledge of version control systems, such as Git and SVN.
	Knowledge of framework/libraries: OpenCV, Caffe, Keras, Pylearn, Tensorflow, Spark, Mesos, Docker, Marathon, Zookeeper, Protobuf, Zmq, JQuery, OpenStreetMap.
	Knowledge of web servers such as Apache HTTP Server, Tomcat.
	Knowledge of operating systems, such as Linux (Ubuntu, Linux4Tegra), Windows, Android, iOS.
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